REMARKS

Claims 1, 3-9, 11-17, and 19-24 are pending in the present application.

Claims 1, 3-9, 11-17, and 19-24 stand rejected under 35 U.S.C. §112, 2nd paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant respectfully traverses this rejection.

Claims 1, 3, 7-9, 11, 15-17, 19, 23, and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Sweazey (U.S. Patent Number 5,333,267) in view of McAlpine (U.S. Patent Number 6,011,789).

Claims 4, 12, and 20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Sweazey and McAlpine in view of Taniguchi (Japanese Patent No. JP 10341240) (hereinafter 'Taniguchi') and in further view of Olson (U.S. Patent Number 4,677,612).

Rejection under 35 U.S.C. §112

The Examiner asserts that Applicant's claims are indefinite. Specifically, the Examiner indicated "it is unclear how the packets can both be reordered after receipt within the plurality of upstream buffers and transmitted based on the order of receipt. By reordering the packets in the buffer, they will no longer be transmitted based on the order of receipt."

Applicant respectfully submits that the Examiner's characterization of Applicant's invention is erroneous. Specifically, Applicant discloses at page 11, line 24 - page 12, line 4

"each upstream reorder logic circuit 150 of FIG. 2 examines the type of transaction that each packet contains and may reorder the packets based on a set of transaction reordering rules. If upstream reorder logic circuit 150 determines that reordering is necessary, operation proceeds to step 350 of FIG. 3A where upstream reorder logic circuit 150 of FIG. 2 reorders the transactions in upstream I/O buffer 125. Proceeding to step 360 of FIG. 3A, upstream transmitter 175 of FIG. 2 may then transmit each packet upstream. Upstream transmitter 175 may transmit the packets **from each upstream I/O buffer 125 based on a first come first served ordering scheme**. (Emphasis added)

Accordingly, Applicant's claim 1 recites

"a plurality of upstream buffers each configured to store a plurality of upstream packets, wherein each of said plurality of upstream packets contains an associated identifier indicative of a source of each of said plurality of upstream packets; and

a router coupled to each of said plurality of upstream buffers and configured to receive said plurality of packets, and to route each of said plurality of packets to **a given one** of said upstream buffers, depending upon the associated identifier, wherein **a given buffer** of said plurality of upstream buffers **stores only packets having a same source**;

a plurality of upstream reorder logic circuits, wherein each one of said plurality of upstream reorder logic circuits is coupled to a corresponding one of said plurality of upstream buffers and is configured to determine **a correct order** of transmitting **each of said packets stored** in said corresponding **one** of said plurality of upstream **buffers** based on a set of predetermined criteria, wherein each of said plurality of upstream reorder logic circuits is further configured to **reorder given ones of said packets stored in said corresponding one of said plurality of upstream buffers in response to determining that said order of transmitting is not correct**;

a transmitter unit coupled to said plurality of upstream reorder logic circuits and configured to transmit **one** packet of said plurality of upstream packets stored within said plurality of upstream buffers **dependent upon an order of receipt within said plurality** of upstream buffers." (Emphasis added)

From the foregoing, it is clear that there is a reorder circuit for each buffer that may reorder packets within the buffer to which it corresponds. Further, the transmitter selects a packet to transmit from among all the buffers based upon an order of receipt. Thus, Applicant submits that regardless of how the packets are arranged in each buffer,

when the transmitter chooses which packet to send, it does so dependent upon an order of receipt.

Accordingly, Applicant respectfully submits the rejection of claims 1, 3-9, 11-17, and 19-24 under 35 U.S.C. §112, 2nd paragraph is erroneous. Applicant further requests the rejection be withdrawn.

Rejection of claims 1, 3, 7-9, 11, 15-17, 19, 23, and 24 under 35 U.S.C. §103

The Examiner asserts Sweazey teaches almost all the limitations of Applicant's claim 1. The Examiner acknowledges that Sweazey does not teach a reorder circuit. Applicant respectfully submits the Examiner's characterization of Sweazey is inaccurate. Furthermore, based on the Examiner's comments regarding the rejection of the claims under 112 2nd paragraph, Applicant submits the Examiner's characterization of the Applicant's invention is also inaccurate.

Specifically, Sweazey discloses at col. 6, lines 41-57

> "In this description, the following definitions are used. A symbol is any quantity of data that can be transferred on a parallel data path during one phase of a clock cycle. A stream is a logically-contiguous sequence of data symbols of arbitrary length. A packet is a portion of a stream having a fixed limit consisting of one head symbol, data symbols, and one tail symbol. The first symbol in a packet of information is a head symbol and the last is a tail symbol. Each symbol used with the ring interconnect 20 includes bits which identify **its source node**, its target node, **the stream with which it is associated**, and an indication of the type of signal (voucher, ticket, head, data, or tail). Thus, a voucher symbol indicates its source, its target, its stream, and that it is a voucher. Head, data, and tail symbols are sometimes referred to as packet symbols. Vouchers and tickets are also called access symbols." (Emphasis added)

Sweazey further discloses at col. 7, lines 8-35

> "The transmit router 37 is responsible for controlling the flow of streams through the transmit port 35 and for sending those streams of information to one of a plurality of source buffers 39. The transmit router 37 receives the symbol stream from the transmit port 35, determines which of the source buffers 39 is entitled to receive the stream, and forwards the stream

to the selected source buffer 39. The transmit router 37 **sorts the incoming symbols by stream number** and collects those symbols together so **that all symbols pertaining to one stream** are placed in one source buffer 39.
Each source buffer 39 functions to hold **one of a number of multiple source streams** and to hold that stream until it can be sent through the downstream port 33. The function of a source buffer 39 is to place symbol streams in packets before transmission around the ring interconnect 20 to maximize the efficiency of the transfer by maximizing the ratio of data symbols to access symbols while limiting packet size to limit transmission delay. As soon as a source buffer 39 has a head symbol and one data symbol, **it sends signals indicating the target node and the stream** to a source handler 52.
The source handler 52 manages permission for a new packet to be launched onto the ring interconnect 20. The source handler 52 responds to **the target node identifier and the stream number** by forming a voucher using this information and sending the voucher symbol to the downstream router 43." (Emphasis added)

Sweazey also discloses at col. 7, lines 45-52

"A packet selector multiplexor 41 determines which source buffer 39 should be **emptied** and forwards the chosen stream of information to a downstream router 43. The packet multiplexor 41 selects among the source buffers 39 **that have permission** to transmit a packet and selects one. Once selected, the packet multiplexor 41 transmits the packet of information until terminated by the source buffer 39. Each packet regardless of its source is transmitted to the downstream router 43." (Emphasis added)

From the foregoing passages in Sweazey, it is apparent to Applicant that Sweazey teaches storing all symbols having the same stream number in a respective corresponding buffer. However, from Sweazey's own definition of a stream and of the symbols, each symbol includes information indicative of both the source node and the stream. This is in stark contrast to the use of the term "stream" as used in Applicant's invention, which states "As used herein, "I/O stream" refers to all packet transactions that contain the same Unit ID and therefore originate from the same node." Furthermore, Sweazey teaches once a head symbol and a data symbol are received in the source buffer, it sends signals indicative of the target node and the stream. Applicant asserts by implication, Sweazey teaches a stream number (and thus a stream) is not indicative of the source of a stream, but rather it is more indicative of the target node. This is especially apparent since the

system of Sweazey uses a voucher and ticket based mechanism for determining whether a target node has space to receive packets. (*See* col. 5, lines 14-47) Sweazey also teaches packets are transmitted that have permission. As described above, permission apparently means once a head and data symbol are received. This is in contrast to Applicant's invention which uses an order of receipt to determine which packet to transmit.

Accordingly, Applicant submits Sweazey **does not teach or disclose** "packets contains an associated identifier indicative of a source of each of said plurality of upstream packets; ... and to route each of said plurality of packets to **a given one** of said upstream buffers, depending upon the associated identifier, wherein **a given buffer** of said plurality of upstream buffers **stores only packets having a same source**," as recited in Applicant's claim 1. In addition, Applicant submits Sweazey does not teach or disclose "a transmitter unit ...configured to transmit **one** packet of said plurality of upstream packets stored within said plurality of upstream buffers **dependent upon an order of receipt within said plurality** of upstream buffers," as recited in Applicant's claim 1.

McAlpine teaches, at col. 5, reordering tokens within a priority queue. McAlpine further teaches using a tag based priority mechanism at col. 13, lines 39-50

> "When a particular token is read from the schedule table, according to the embodiment of the present invention depicted in FIG. 11, the token is tagged with its relative priority and the relative position of its target time to the current time, using a tag function 1140, and written to the priority queue. Once in the priority queue, the relative priority information in each of the various tags is continually updated, as tokens are added to and removed from the priority queue. The priority queue uses the tags to prioritize, via an arbitration mechanism 1150, between the tokens in the priority queue, to determine the token to be next sent to the transmit controller for servicing.

Thus, Applicant submits that neither Sweazey nor McAlpine teach or suggest the combination of features recited in Applicant's claim 1. Thus, Applicant believes claim 1, along with its dependent claims, to patentably distinguish over Sweazey and McAlpine for the reasons given above.

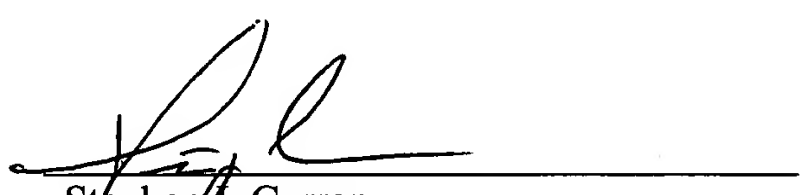
Applicant's claims 9 and 17 recite features that are similar to features recited in claim 1. Accordingly, Applicant believes claims 9 and 17, along with their respective dependent claims, to patentably distinguish over Sweazey and McAlpine for at least the reasons given above.

CONCLUSION

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5500-66800/SJC.

Respectfully submitted,



Stephen J. Curran
Reg. No. 50,664
AGENT FOR APPLICANT(S)

Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C.
P.O. Box 398
Austin, TX 78767-0398
Phone: (512) 853-8800

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